

Health Fact Sheets

Hearing loss of Canadians, 2012 to 2015



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- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
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- ^P preliminary
- ^r revised
- X suppressed to meet the confidentiality requirements of the *Statistics Act*
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- F too unreliable to be published
- * significantly different from reference category ($p < 0.05$)

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Health Fact Sheets Hearing loss of Canadians, 2012 to 2015



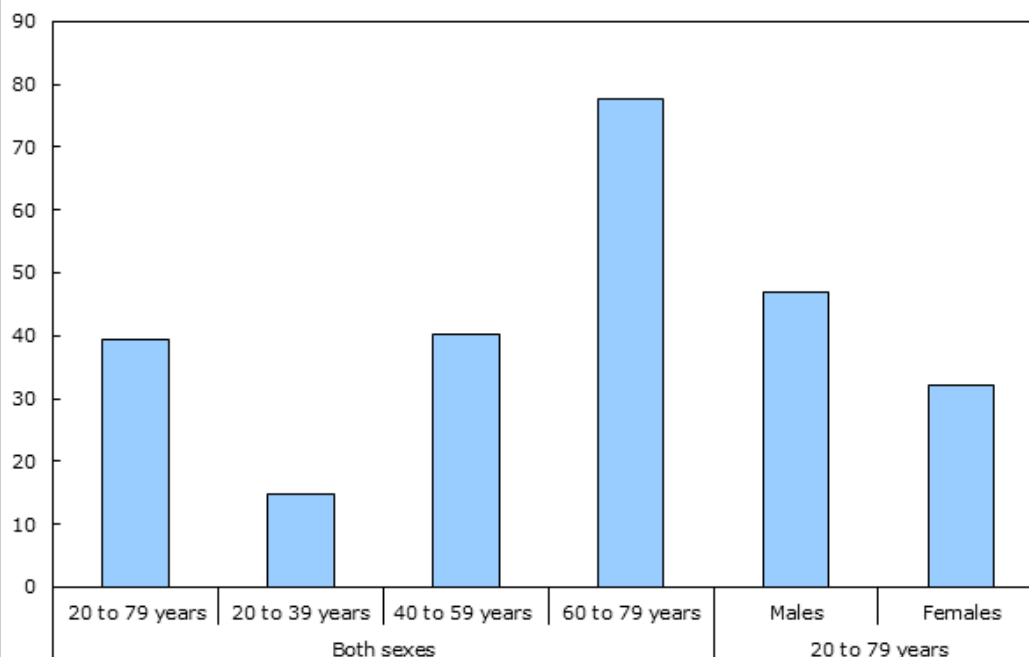
Hearing loss is an important health concern which is often unrecognized and undertreated.^{1,2} Hearing loss can have many emotional and social consequences including social isolation, depression, safety issues, mobility limitations and reduced income and employment opportunities.^{3,4} In older adults, hearing loss has also been shown to be associated with poor quality of life and functional limitations.^{1,2} In children and youth, there is evidence that hearing loss negatively affects academic performance and language development needed for classroom learning and vocational achievement.^{5,6}

Hearing loss in adults

Audiometry results from the 2012 to 2015⁷ Canadian Health Measures Survey (CHMS) indicate that 40% of adults aged 20 to 79 had at least slight hearing loss⁸ in one or both ears (Chart 1). Hearing loss was more prevalent in older age groups. Adults aged 60 to 79 were significantly more likely to have hearing loss (78%) compared with younger adults aged 40 to 59 (40%) and 20 to 39 (15%). Males (47%) were significantly more likely to have hearing loss compared with females (32%).

Chart 1
Hearing loss among adults aged 20 to 79, by sex and age group, Canada, 2012 to 2015

percent



Note: Hearing loss is defined as a speech-frequency pure-tone average consistent with at least slight hearing loss (> 15 decibels) in at least one ear.

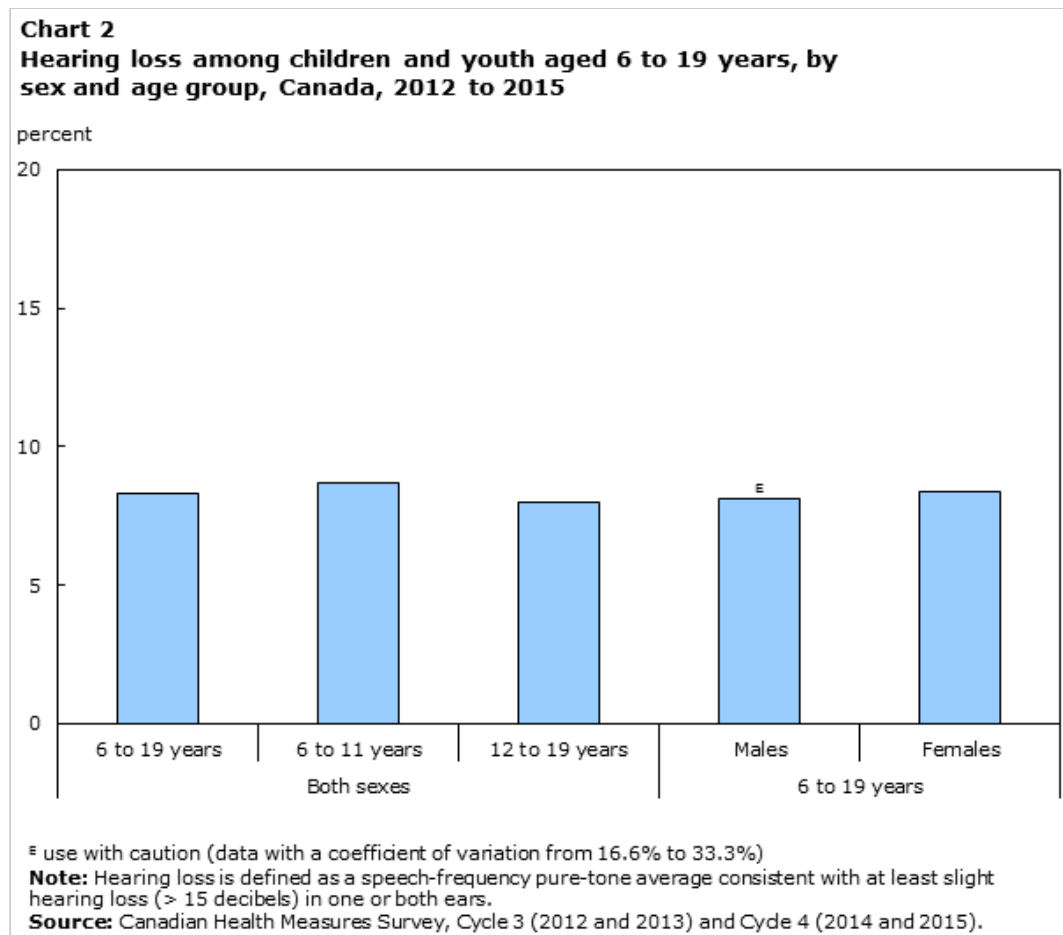
Source: Canadian Health Measures Survey, Cycle 3 (2012 and 2013) and Cycle 4 (2014 and 2015).

The survey assessed hearing loss as either unilateral (occurring in only one ear) or bilateral (occurring in both ears). Hearing loss was unilateral in 37% and bilateral in 63% of adults with at least slight hearing loss (data not shown). Bilateral hearing loss was significantly more likely in the older age groups. Nearly 1 in 3 adults aged 20 to 39 with hearing loss had bilateral

loss compared with half of those aged 40 to 59 and 3 in 4 of those aged 60 to 79 (data not shown).

Hearing loss in children and youth

Audiometry results indicate that 8% of children and youth aged 6 to 19 had hearing loss that was considered slight or worse (Chart 2). Unlike adults, the prevalence of hearing loss did not differ by sex among children and youth. The majority (79%) of children and youth with hearing loss had hearing loss in only one ear (unilateral, data not shown).

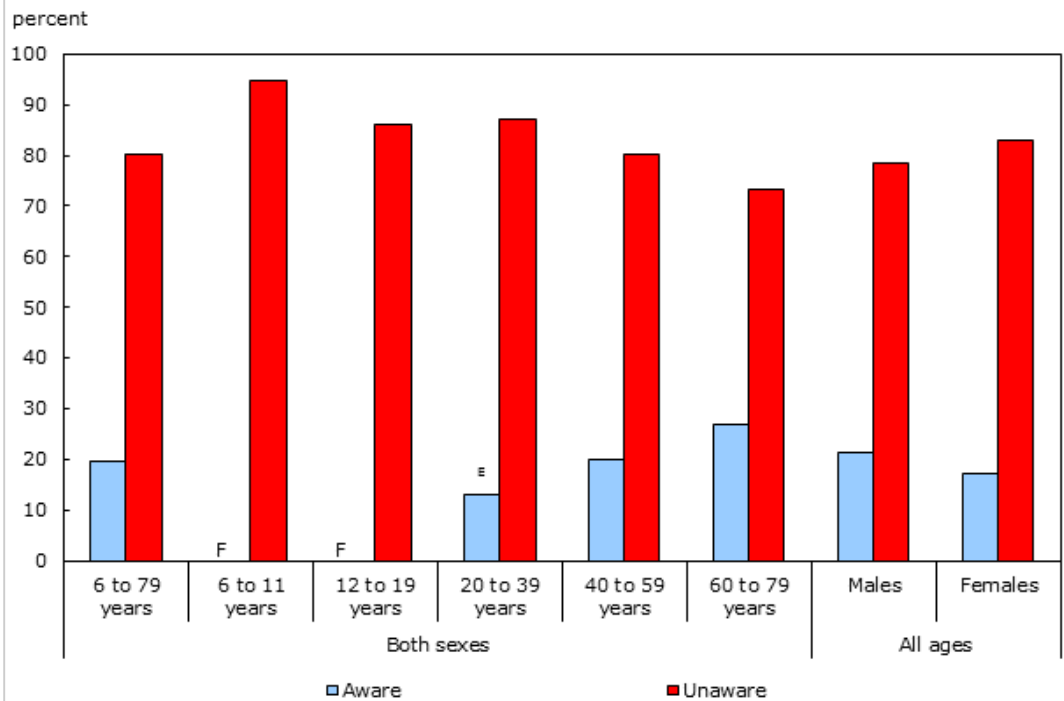


Audiometry tests were not conducted on children aged 3 to 5. However, results from the otoacoustic emissions testing and tympanometry indicate that about 4% of children aged 3 to 5 had results consistent with conductive hearing loss (data not shown, see About hearing). Conductive hearing loss can indicate the potential for temporary or permanent hearing loss.⁹

Awareness of hearing loss

The majority of Canadians with measured hearing loss were not aware they had any hearing problems (Chart 3). About 77% of adults with at least slight measured hearing loss did not report a diagnosis of hearing problems by a health care professional, while the same occurred in 95% of children aged 6 to 11 and 86% of youth aged 12 to 19. Males and females were similar in that 79% of males and 83% of females with at least slight measured hearing loss did not report a diagnosis of a hearing problem.

Chart 3
Awareness of hearing loss among those aged 6 to 79 years
with measured hearing loss, by sex and age group, Canada,
2012 to 2015



^E use with caution (data with a coefficient of variation from 16.6% to 33.3%)
^F too unreliable to be published (data with a coefficient of variation (CV) greater than 33.3%; suppressed due to extreme sampling variability)
Notes: Awareness of hearing loss was based on whether or not the respondent has ever been diagnosed with a hearing problem by a health professional.
Hearing loss is defined as a speech-frequency pure-tone average consistent with at least slight hearing loss (> 15 decibels) in one or both ears.
Source: Canadian Health Measures Survey, Cycle 3 (2012 and 2013) and Cycle 4 (2014 and 2015).

Noise exposure among Canadians

Of Canadians aged 16 to 79, 42% have worked or currently work in an environment where it is required to speak in a raised voice to communicate with someone standing an arm's length away. Among these individuals, 24% always used hearing protection, while 41% never did. The remaining 35% used hearing protection often, sometimes, or rarely.

Fifty three percent of Canadians aged 3 to 79 have used earbuds or headphones to listen to music, movies or other types of audio in the last 12 months. One-third of those individuals regularly listened at a volume that was at or above three quarters of the maximum volume.

Tinnitus (hissing, buzzing, ringing, rushing or roaring sounds in the ears) has been experienced by 42% of Canadians aged 3 to 79. Among these people, approximately 1 in 5 reported that the tinnitus was severe enough that it affected their sleep, concentration, or mood.¹⁰

About hearing

Sensorineural hearing loss is the most common type of permanent hearing loss and occurs when there is damage to the inner ear or the nerve pathways from the ear to the brain. Sensorineural hearing loss can occur following exposure to loud and prolonged noise which may be experienced in work environments without hearing protection and/or during noisy leisure activities such as listening to music with headphones/earbuds with the volume setting at one-half of maximum or higher, attending sporting events or concerts. Other possible causes of sensorineural hearing loss include aging, drug use toxic to hearing, hereditary or genetic factors, smoking, head trauma and malformation of the inner ear.¹¹

Audiometric tests were administered as part of the Canadian Health Measures Survey to assess sensorineural hearing loss in children and adults aged 6 to 79. In this article, hearing loss was defined as an audiometric speech-frequency (0.5, 1, 2 and 4 kHz frequencies) pure-tone average greater than 15 decibels (dB), in one or both ears based on the hearing loss ranges published by the American Speech-Language-Hearing Association (ASHA).⁸ The Awareness of hearing loss was based on whether or not the respondent answered “yes” to the question “Has a health professional ever diagnosed you with a hearing problem?”¹⁰

Otосcopy, tympanometry and distortion product otoacoustic emissions (DPOAE) tests were also conducted on respondents aged 3 to 79. Tympanometry measures the mobility of the ear drum and the pressure of the middle ear system. DPOAE measures function of the cochlea in the inner ear. Both DPOAE and tympanometry can be used to evaluate conductive hearing loss, which is caused by problems in the outer and/or middle ear, such as excessive wax, ear infections or fluid build-up. This form of hearing loss can occur independently or in conjunction with sensorineural hearing loss.¹²

Data

Canadian Health Measures Survey data on this topic are available in CANSIM table 117-0022 (www.statcan.gc.ca/cansim/pick-choisir?lang=eng&p2=33&id=1170022).

For more information on the Canadian Health Measures Survey, please contact Statistics Canada's National Contact Centre (toll-free 1-800-263-1136; 1-514-283-8300; STATCAN.infostats-infostats.STATCAN@canada.ca).

Notes

- 1 Dalton, D.S., Cruickshanks, K.J., Klein, B.E.K., Klein, R., Wiley, T.L., and Nondahl, D.M. 2003. “The impact of hearing loss on quality of life in older adults.” *The Gerontologist*. Vol. 43, no. 5.
- 2 Mitchell, P., Gopinath, B., Wang, J.J., McMahon, C.M., Schneider, J., Rochtchina, E., and Leeder, S.R. 2011. “Five-year incidence of hearing impairment in an older population.” *Ear and Hearing*, vol. 32, no. 2.
- 3 Bizier, C., Contreras, R., and Walpole, A. 2016. “Canadian Survey on Disability - Hearing Disabilities Among Canadians Aged 15 Years and Older, 2012.” *Fact Sheet Statistics Canada*. February 2016. Statistics Canada Catalogue no. 89-654-X2016002.
- 4 Brennan, S., Gombac, I., and Sleightholm, M. 2009. “Participation and Activity Limitation Survey 2006 - Facts on Hearing Limitations” *Fact Sheet Statistics Canada*. 2009. Statistics Canada Catalogue no. 89-628-X 2009012.
- 5 Dodd-Murphy, J., and Mamlin, N. 2002. “Minimizing minimal hearing loss in the schools: What every classroom teacher should know.” *Preventing School Failure*, vol. 46, no. 2.

- 6 Lieu, J.E. 2004. "Speech-language and educational consequences of unilateral hearing loss in children." *Archives of Otolaryngology and Head and Neck Surgery*, vol. 130.
- 7 Hearing data from Cycle 3 (2012 and 2013) and Cycle 4 (2014 and 2015) of the CHMS were combined for this fact sheet.
- 8 American Speech-Language-Hearing Association. 2015. "Type, Degree, and Configuration of Hearing Loss." *American Speech-Language-Hearing Association, Audiology Information Series*. Available at <http://www.asha.org/public/hearing/Degree-of-Hearing-Loss/>. Accessed August 11, 2016.
The previously released fact sheet (www.statcan.gc.ca/daily-quotidien/150415/dq150415c-eng.htm) and Health Reports article (www.statcan.gc.ca/pub/82-003-x/2015007/article/14206-eng.htm) for Canadian Health Measures Survey 2012 and 2013 data defines hearing loss as pure-tone average greater than 25 decibels (dB) for adults and greater than 20 dB for children. The cut point for hearing loss was modified to include those with slight hearing loss (15 dB) for both adults and children based on the ASHA Degree of Hearing Loss table.
- 9 Gentile, A., Schein, J.D., and Haase, K., 1967. "Characteristics of persons with impaired hearing." *Vital and Health Statistics*, Data from the National Health Survey. Vol. 10, no. 35.
- 10 In children aged 11 years and younger, questions were answered by a parent or guardian.
- 11 Feder, K., Michaud, D., Beaugard, Y., and Fitzpatrick, E. 2016. "Prevalence of hearing loss among a representative sample of Canadian children and adolescents, 3 to 19 years of age." *Ear and Hearing*, in press.
- 12 Speech-Language and Audiology Canada. *Adults*. CITY: Speech-Language and Audiology Canada. Available at www.sac-oac.ca/public/adults. (accessed August 15, 2016).